



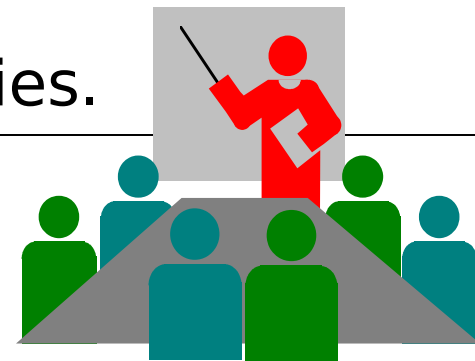
Ecosystem Restoration

Module ER1: Authorities and Policies



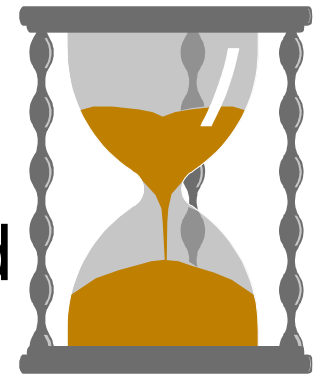
Student Learning Objectives

- General understanding of the significant legislation
- Define mitigation and distinguish it from restoration
- Describe Corps ecosystem restoration authorities
- List the types of projects that can be implemented
- Identify the limitations of these authorities.
- Apply appropriate cost sharing and policies.



Environmental Planning Laws

- National Environmental Policy Act
- Endangered Species Act
- Fish and Wildlife Coordination Act
- National Historic Preservation Act
- Coastal Zone Management Act
- Magnuson Fishery Conservation and Management Act
- Farmland Protection Policy Act



Regulatory Laws - RCRA & CERCLA

- The Resource Conservation and Recovery Act (RCRA)
 - Regulates hazardous waste, solid waste, and underground storage tanks
- The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
 - Imposes liability for cleanup of hazardous substances as a result of past activities



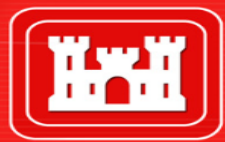
Regulatory Laws Clean Water & Clean Air

- Clean Water Act
 - National Pollutant Discharge Elimination System (NPDES)
 - Water quality certification
- Marine Protection, Research, and Sanctuaries Act of 1972
 - Ocean dumping
 - Ocean disposal sites
- Clean Air Act
 - Comply with standards
 - Prepare air quality impact assessments



Executive Orders

- EO 11988 – Floodplain Management
- EO 11990 – Protection of Wetlands
- EO 12898 – Environmental Justice
- EO 13186 – Migratory Waterfowl

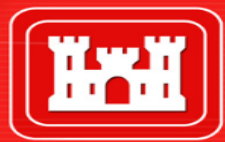


For Further Information

- Attend Environmental Considerations in Planning Core Curriculum Course
- Attend Environmental Laws and Regulations Prospect Course
- Check Environmental Desk Reference on CD

Ecosystem Restoration Objective

- Restore degraded significant ecosystem structure, function, and dynamic processes to a less degraded, more natural condition.
 - Improve or re-establish structural components and functions of natural areas
 - Mimic, as closely as possible, conditions, which would occur in the area in the absence of human changes to the landscape and hydrology



Ecosystem Restoration: Related Concepts

- Enhancement
- Environmental Restoration
- Conservation
- Rehabilitation
- Protection
- Preservation
- Mitigation



What is Mitigation?

Mitigation is the measures taken to lessen the adverse impacts of a project on physical, ecological and socio-economic resources

Mitigation

- Mitigation seeks to maintain the value of significant resources at the without condition
- Any improvement in the value of these significant resources is incidental





Sequence of Mitigation Approaches

- Avoid, may include design considerations
- Minimize
- Rectify
- Reduce
- Compensate
 - In-kind
 - Out-of-kind

Restoration

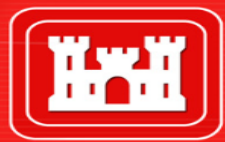


- Seeks to improve the without condition
- Return a degraded condition to a less-degraded condition

Evaluation of Mitigation may lead to Ecosystem Restoration Opportunities

- The resource base is the same
- The agencies are the same
- The local sponsor is motivated
- Therefore, you may have an opportunity for ecosystem restoration





Major Environmental Resource Types Which Are Typically Mitigated

- **Ecological**

- Fish and Wildlife Service
- State Fish and Game
- National Marine Fisheries Service

- **Cultural/Historical**

- State Historic Preservation Office
- Advisory Council on Historic Preservation
- Tribal Historic Preservation Office

- **Aesthetic**

- Interested parties

- **Water Quality**

- EPA
- State Water Quality Office (Regional Water Quality Control Board)

- **Other?**



Mitigation Planning-Early Activities

- Inventory and Categorize Ecological Resources
- Coordination, Consultation and Public Involvement
- Determine Significant Net Losses
- Define Mitigation Objectives
- Determine Units of Measure



Mitigation Planning-Later Activities

- Identify and Assess Potential Mitigation Strategies
- Define and estimate costs of mitigation plan increments
- Display incremental costs
- Compare mitigation alternatives
- Reformulate?

Mitigation Planning: Selection

- The District Commander makes the call
 - Staff is primary advisor
- Don't Need to Mitigate Everything but special policies govern
 - Wetlands
 - Bottomland Hardwoods
 - Monitoring (and Adaptive Measure)
 - Section 906: Concurrent mitigation

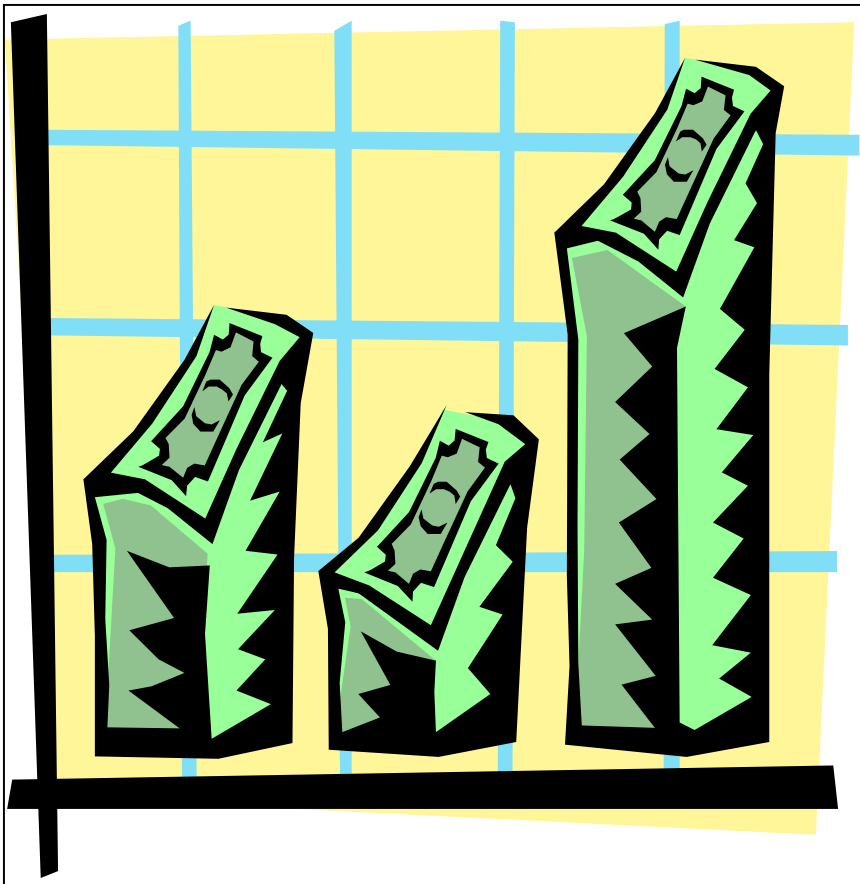




Mitigation Planning- New Activities

- WRDA 2007 section 2036 now requires mitigations for flow and wetland losses w/monitoring plan; cost/duration defined responsibility and success criteria.
- Requires monitoring until meeting ecological success criteria

Who Pays for Mitigation



- Cost-sharing: Responsible purpose pays
- Costs are allocated accordingly
- PL 93-291 (“1% rule”) – A special provision. All Federal cost. Up to 1% of Federal share of construction cost, only for data recovery and documentation of cultural resources. Not included in NED costs. Not part of the cost-shared project mitigation for adverse environmental effects.



Evolution Towards Ecosystem Restoration Authorities and Policies

- No mitigation
- Mitigation incorporated into project plans
- Restoration linked to past Corps projects
- Restoration of other degraded water resources
- Regional programs
- Formulate comprehensive plans with restoration and NED purposes



Ecosystem Restoration Authorities

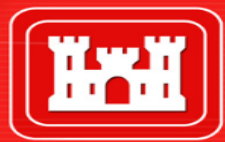
- Specifically authorized studies
- Programmatic authorities
- Additional restoration opportunities

Specifically Authorized Studies/Projects

- Single purpose
- Multiple purpose
- Review of completed projects
- Study Cost Sharing – 50/50
- Construction cost sharing – 35% non-Federal which includes lands

Programmatic Authorities

- What you need to know to determine proper authority
 - Limits on authorities
 - Is linkage to a Corps project needed?
 - Are lands needed?
 - Size of the problem
 - Sponsor's capability



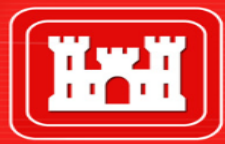
Programmatic Authorities

- Project modification for improvement of the environment
- Aquatic Ecosystem Restoration
- Beneficial use of dredged material



Project Modifications for Improvement of the Environment Section 1135 of WRDA 1986, Amended

- Purpose
 - Modify Federal projects to improve the environment (“Federal” in this case includes Corps projects and/or Corps participation in the original Federal project)
- Constraint
 - Consistent with authorized project purposes
- Non-Federal Cost-Sharing
 - 25 percent of the implementation cost including lands, easements, rights-of-way, relocations, and disposal areas (LERRD)
 - 100 percent of operation and maintenance
 - 80 percent of the non-Federal share may be work-in-kind



Aquatic Ecosystem Restoration Section 206 of WRDA 1996

- Purpose
 - Aquatic ecosystem restoration that improve environment
- Non-Federal Cost-Sharing
 - 35 percent of the cost of implementation which includes lands, easements, rights-of-way, relocations, and disposal areas
 - 100 percent of OMRR&R
 - 100 percent of the non-Federal share may be work-in-kind



Beneficial Use of Dredged Material

Section 204 of WRDA 1992,

- Purpose
 - Habitat restoration using dredged material
- Base plan
 - Least costly disposal method
- Non-Federal Cost-sharing
 - 25 percent of construction cost above the base plan
 - 100 percent of OMRR&R for ecosystem restoration
 - No credit allowed for work-in-kind



Placement of Dredge Material on Beaches (Section 145, WRDA 1976)

- Purpose
 - Placement of dredged material on beaches
- Non-Federal Cost-Sharing
 - 35% (WRDA 1996) of the incremental cost over the cost of the least costly method of disposal when placement is to obtain economic outputs



Section 312, WRDA 1990, Environmental Dredging as Amended by Section 224 WRDA 1999

- Purpose
 - Removal and remediation of contaminated sediments from Navigable waters
 - Applies to non-CERCLA sites
- Non-Federal Cost-Sharing
 - Normal O&M project cost sharing when project related
 - 35% when not project related but in navigable waters



Federal Funding Limits

Authority	Project	Annual
Section 1135	\$5 million	\$25 million
Section 206	\$5 million	\$25 million
Sections 204	none	\$15 million
Section 312	none	\$20 million

Additional Ecosystem Restoration Authorities

- Section 906 of WRDA 1986 – Fish and Wildlife Mitigation and Enhancement
- Section 907 of WRDA 1986 – Benefits and Costs Attributable to Environmental Measures
- Section 306 of WRDA 1990 – Environmental Protection Mission



Additional Ecosystem Restoration Authorities (Cont.)

- Section 307 of WRDA 1990 - Wetlands
- Section 203 of WRDA 1992 – Voluntary Contributions for Environmental and Recreation Projects
- Section 210 of WRDA 96 – Cost Sharing for Environmental Projects
- Section 212 of WRDA 99 (Challenge XXI)
 - Flood mitigation and riverine restoration program

How is Restoration Plan Formulation Different?

- It makes environmental improvement an objective
- The ultimate design is not of human origin
- The ultimate design is self-maintaining
- We can facilitate but not dictate restoration
- Policy constraints differ

Policy Considerations

- The project should restore ecosystem structure, functions and values
- The project should result in improved environmental quality
- The improvement should be of great enough national significance to justify federal expenditure



Policy Considerations

- The sum of all monetary and non-monetary benefits should exceed the sum of all monetary and non-monetary costs
- The measures taken to improve environmental quality should result in a more naturalistic and self-regulating system
- The measures should reestablish to the extent possible a close approximation of preexisting conditions



Ecosystem Restoration Policies: Highlights

- Ecosystem restoration is a priority mission
- Systems context
- Avoid need for mitigation
- Public interest
- Land acquisition
- Water quality
- Recreation
- Monitoring and adaptive management
- Applying Corps expertise
- Operational effectiveness



Group Exercise

- Problem
 - Existing WPA channel modifications have degraded the local creek's ecosystem
 - Local community wants the creek restored to support local redevelopment initiatives



US Army Corps of Engineers



Deteriorated WPA Wall Along the Menomonee River in Valley Park (Piggsville), WI





US Army Corps of Engineers



View of Deteriorated WPA Wall Along the Menomonee River the Valley Park (Piggsville) Area of Milwaukee, WI





View of deteriorated WPA wall located on east bank of Menomonee River in the Valley Park area.



US Army Corps of Engineers



View of Railroad Bridge (Foreground) and Highway Bridge Located over the Menomonee River in the Valley Park, WI (Piggsville) Area, Milwaukee, WI





US Army Corps of Engineers



Looking south at Menomonee River channel RR bridge and I-94 freeway bridge.



US Army Corps of Engineers



Looking north at the Menomonee River channel in the Valley Park area.



US Army Corps of Engineers



Aerial View of The Valley Park (Piggsville) Area and the Menomonee River in Milwaukee, WI. This area receives substantial flood damages.





US Army Corps of Engineers



Another Aerial View of the Valley Park (Piggsville) Area, Milwaukee, WI that suffers flood damages from the Menomonee River





Group Exercise





Group Exercise

- Tasks
 - Develop a list of “planning issues”
 - Develop an approach to help the local sponsor within Corps authorities.

Take Away Points

- Mitigation is based on adverse project impacts comparing the without and with conditions
- Restoration is based on improving the without condition
- Early coordination and avoidance is the key to sound mitigation and restoration planning
- Mitigation costs are allocated to the associated project purpose
- The District Commander makes the mitigation call
- Ecosystem Restoration is a high budgetary priority



What's Next

- First two steps of the planning process
 - Problem Identification
 - Inventory and forecast
- Plan formulation Information needs
- Methods for quantifying habitat values



Challenge Question

- How does eco-friendly design relate to mitigation and ecosystem restoration?